

REMARKS

Prior to entry of this amendment, Claims 1-29 were pending. By this paper, Claim 1 has been amended. Thus, Claims 1-29 remain pending and are presented for further consideration.

Discussion of Claim Rejection under 35 U.S.C. § 103(a)

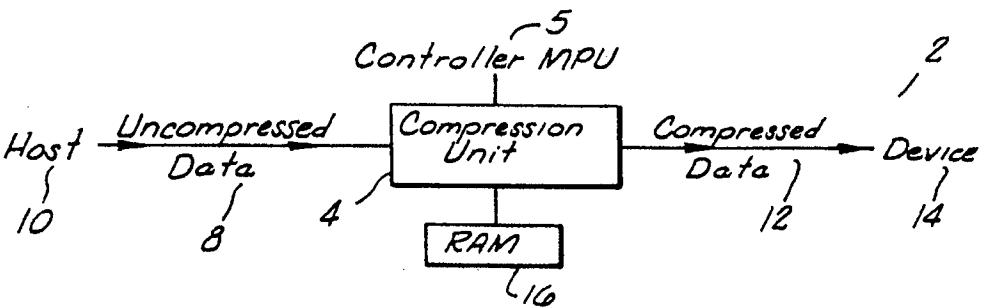
In paragraph 4 of the Office Action Claims 1-5, 7, 8, 10, 12-15, 17-20, and 22-29 are rejected under 35 U.S.C. §103(a) as being unpatentable over Gonzales (U.S. Patent No. 5,289577) in view of Whiting (U.S. Patent No. 5,016,009). In view of the claim amendments above and the remarks below, Applicant respectfully request reconsideration of all claims.

The Cited Art

Gonzales is directed toward a "Process Pipeline Architecture for Image/Video Processing." *Gonzales*, Title. Gonzales describes "an image processing system constructed with a process-pipeline architecture having a plurality of serially coupled computational routines or functions." *Id.* at col. 21-25.

Whiting is directed toward a "Data compression Apparatus and Method." *Whiting*, Title. Whiting describes "[a]n apparatus and method for converting an input data character stream into a variable length encoded data stream in a data compression system." *Id.* at Abstract. As illustrated in Figure 1a of Whiting, reproduced below, "an input data stream 8 is received by the compression unit 4 from a data source called the host 10, and the encoded compressed data stream 12 is transmitted to a data sink called the device 14." *Id.* at col. 8, lines 24-29.

FIG. 1a.



Whiting describes the operation of the compression unit 4 in compressing the input data stream into a compressed data stream:

When the first input byte is received by the compression unit 4 a search is performed to determine whether there were any other 2-byte strings in history which match the first input byte. The first input byte is character "A" (76, FIG. 3) which has no prior history and, thus, this first byte is appended to the encoded output stream after a tag bit of "0" to indicate that the 8-bit byte is "raw" (or not compressed) as shown at 76, 77, (FIG. 3). *Id.* at col. 9, lines 40-48.

Accordingly, Whiting appears to teach that characters in an input string are compared to a portion of the input string that has already been received, e.g. the "prior history," in order to find matching sequences of bytes in the input data string and the prior history.

As noted in Whiting:

A history array 102 containing the last 2048 characters of previously processed input data (which has already been compressed or which is uncompressed as raw data) is stored in RAM 16 (FIG. 1a). When new input data is received by the compression unit 4 (FIG. 1a), the present invention checks to see if a "string" of at least 2 bytes in the new input data matches the string in the history array 102. If so, this string of input data is encoded or, if it is not, it is represented as raw data as described above. *Id.* at col. 10, lines 47-56.

Thus, Whiting describes a compression apparatus that matches data bytes of an input data string with data bytes that were previously received in the same input data string.

Discussion of Claim Rejections

In section 4 of the Office Action, Claims 1-5, 7, 8, 10, 12-15, 17-20, and 22-29 are rejected under 35 U.S.C. §103 (a) as being unpatentable over Gonzales (U.S.

Patent No. 5,289,577) in view of Whiting (U.S. Patent No. 5,016,009). In view of the remarks below, Applicant respectfully requests removal of all claim rejections.

Claim 1, as amended, recites:

An apparatus for decompressing video data, comprising:

a start code detector configured to receive a stream of video data comprising video data encoded in a first format and video data encoded in a second format and configured to convert a portion of the stream of video data into at least a stream of data tokens in response to detecting a start code sequence in said stream of video data wherein the stream of data tokens comprise a first plurality of data tokens that are associated with video data encoded in a first format and a second plurality of data tokens that are associated with video data encoded in a second format; and

a pipeline comprising stages that decode the video data in the first and second formats, the start code detector being coupled to send the data tokens to the pipeline.

The cited art, alone and in combination, fails to teach or suggest multiple individual elements of Claim 1, as well as the combination of elements recited in Claim 1.

1. The cited art fails to teach or suggest "**a start code detector configured to receive a stream of video data comprising video data encoded in a first format and video data encoded in a second format.**"
 - a. In particular, Gonzales teaches that "[i]t is one further object of this invention to provide a system for encoding and decoding blocks of video/image data, and to provide a methodology to optimize a pipeline architecture." *Gonzales* at col. 2, lines 14-18. However, Gonzales fails to teach or suggest receiving a single stream of video data that includes video data in each of a first and second format.
 - b. Whiting does not cure the deficiencies of Gonzales because Whiting altogether fails to describe video data. Accordingly, Whiting also fails to teach or suggest receiving a single stream of video data that includes video data in each of a first and second format.

2. The cited art fails to teach or suggest a start code detector configured "to convert a portion of the stream of video data into at least a stream of data tokens ... [comprising] a first plurality of data tokens that are associated with video data encoded in the first format and a second plurality of data tokens that are associated with video data encoded in the second format."
 - a. The Office Action acknowledges lack of teaching this feature in Gonzales. *Office Action* at page 3:
 - b. Whiting fails to cure the deficiencies of Gonzales because Whiting altogether fails to describe
 - i. video data,
 - ii. data tokens that are associated with video data encoded in a first format,
 - iii. data tokens that are associated with video data encoded in a second format, and
 - iv. a start code detector that converts video data into at least the two sets of data tokens.
 - c. In contrast to Claim 1, Whiting describes a compression method for "converting an input data character stream into a variable length encoded data stream in a data compression system." *Whiting* at Abstract.
 - d. The Office Action associates the claimed "data tokens that are associated with video data in a first format" with the "data character stream" in Whiting. However, as noted above with reference to Whiting, the "data character stream" in Whiting is an *input character stream* that is received by the compression unit of Whiting (to be compressed), rather than data tokens that are generated by a start code detector in response to a received stream of video data, as recited in Claim 1.

e. Furthermore, the Office Action associates the claimed "data tokens that are associated with video data in a second format" with the "receive string" in Whiting. Initially, Applicant notes that the term "receive string" is not found in Whiting and, accordingly, this rejection is unclear. In the sections of Whiting referenced by the Office Action in this rejection, an "encoded output stream" and a "history array" are described, neither of which teaches or suggests "data tokens that are associated with video data in a second format." Furthermore, Figure 3 of Whiting, reproduced below, illustrates a "results table utilizing the compression scheme shown in FIG. 2." *Id.* at col. 9, lines 25-26. As illustrated in Figure 3 of Whiting, the "comments 79" indicate that the output bit stream indicates, for each input byte, either a "raw byte" of the input byte stream or an offset and length of a matching string of characters in another portion of the input string. However, Whiting fails to teach or suggest even one string comprising "data tokens that are associated with video data encoded in a first format second format," as recited in Claim 1.

FIG. 3.

<i>Input byte stream</i> 75	<i>Output bit stream</i> 77	<i>Comment</i> 79
---->A	0 aaaaaaaaa	Raw byte A ~ 76
B	0 bbbbbbbb	Raw byte B ~ 78
->A	0 aaaaaaaaa	Raw byte A ~ 80
-<-A	1 1 0000001 1100	String of length 5, at offset 1
A	encode short offset length	82
A		
A		
C	0 cccccccc	Raw byte C ~ 84
---<-A	1 1 0001001 01	String of length 3, at offset 9
B		86
A		

3. The cited art fails to teach or suggest "**a pipeline comprising stages that decode the video data in the first and second formats.**"

- a. The Office Action acknowledges lack of teaching this feature in Gonzales. *Office Action* at page 3.
- b. Whiting fails to cure the deficiencies of Gonzales because Whiting fails to teach or suggest decoding of "video data in the first and second formats." In fact, Whiting fails to teach or suggest any use of video data. Furthermore, Whiting fails to teach or suggest any *decoding* of video data, but instead teaches "Data Compression." *Whiting*, Title.

In view of at least the reasons discussed above, Applicant respectfully submits that Claim 1 is patentably distinguished over the cited art and respectfully requests allowance of Claim 1.

Although Claims 14, 19, and 25 each include different features than Claim 1, each of these independent Claims is believed to be patentable for similar reasons as Claim 1 (where applicable), and because of their unique features recited therein. Claims 2-5, 7, 8, 10, 12, and 13, which depend from Claim 1, are believed to be patentable for the same reasons articulated above with respect to Claim 1, and because of the additional features recited therein. Claims 15, 17, and 18, which depend from Claim 14, are believed to be patentable for the same reasons articulated above with respect to Claim 14, and because of the additional features recited therein. Claims 20 and 22-24, which depend from Claim 19, are believed to be patentable for the same reasons articulated above with respect to Claim 19, and because of the additional features recited therein. Claims 26-29, which depend from Claim 25, are believed to be patentable for the same reasons articulated above with respect to Claim 25, and because of the additional features recited therein.

Allowance of all claims is respectfully requested.

OTHER PATENTS AND PATENT APPLICATIONS

This pending patent application is part of a large patent family, thus Applicant wishes to draw the Examiner's attention to the following matters:

Appl. No.	Filing Date	Attorney Docket No.	Title
08/082,291 abandoned	06/24/93	N/A	DATA PIPELINE SYSTEM AND DATA ENCODING METHOD
08/382,958 abandoned	02/02/95	N/A	DATA PIPELINE SYSTEM AND DATA ENCODING METHOD
08/400,397 abandoned	03/07/95	N/A	DATA PIPELINE SYSTEM AND DATA ENCODING METHOD WITH START CODE DETECTOR
08/399,898, now U.S. Patent No. 5,768,561	03/07/1995	KM0920.1CCPD1	TOKENS-BASED ADAPTIVE VIDEO PROCESSING ARRANGEMENT
08/400,211, now U.S. Patent No. 5,842,033	03/07/1995	KM0920.1CCPD3	PADDING APPARATUS FOR PASSING AN ARBITRARY NUMBER OF BITS THROUGH A BUFFER IN A PIPELINE SYSTEM
08/400,201, now U.S. Patent No. 5,603,012	03/07/1995	KM0920.1CCPD7	START CODE DETECTOR
08/483,020, now U.S. Patent No. 6,035,126	06/07/1995	KM0920.1CCPD4	DATA PIPELINE SYSTEM AND DATA ENCODING METHOD
08/484,730, now U.S. Patent No. 6,263,422	06/07/1995	KM0920.1CCPD13	PIPELINE PROCESSING MACHINE WITH INTERACTIVE STAGES OPERABLE IN RESPONSE TO TOKENS AND SYSTEM AND METHODS RELATING THERETO
08/482,296, now U.S. Patent No. 6,435,737	06/07/1995	KM0920.1CCPD8	DATA PIPELINE SYSTEM AND DATA ENCODING METHOD
08/850,125, now U.S. Patent No. 5,956,519	05/01/1997	KM0920.1CCPD6C	PICTURE END TOKEN IN A SYSTEM COMPRISING A PLURALITY OF PIPELINE STAGES
08/903,969, now U.S. Patent No. 6,038,380	07/31/1997	KM0920.1CCPD14C	DATA PIPELINE SYSTEM AND DATA ENCODING METHOD
08/937,143, now U.S. Patent No. 6,079,009	09/24/1997	KM0920.1CCPD15C	CODING STANDARD TOKEN IN A SYSTEM COMPRISING A PLURALITY OF PIPELINE STAGES
08/947,727, now U.S. Patent No. 5,809,270	09/25/1997	KM0920.1CCPD2C	INVERSE QUANTIZER
08/947,675, now U.S. Patent No. 5,881,301	10/02/1997	KM0920.1CCPD12C	INVERSE MODELLER

Appl. No.	Filing Date	Attorney Docket No.	Title
09/307,239, now U.S. Patent No. 6,330,666	10/07/1997	KM0920.1CCPC1	MULTISTANDARD VIDEO DECODER AND DECOMPRESSION SYSTEM FOR PROCESSING ENCODED BIT STREAMS INCLUDING START CODES AND METHODS RELATING THERETO
08/946,754, now U.S. Patent No. 6,067,417	10/07/1997	KM0920.1CCPD16C	PICTURE START TOKEN
08/947,676, now U.S. Patent No. 5,978,592	10/08/1997	KM0920.1CCPD9C	VIDEO DECOMPRESSION AND DECODING SYSTEM UTILIZING CONTROL AND DATA TOKENS
08/967,515, now U.S. Patent No. 6,112,017	11/11/1997	KM0920.1CCPD10C	PIPELINE PROCESSING MACHINE HAVING A PLURALITY OF RECONFIGURABLE PROCESSING STAGES INTERCONNECTED BY A TWO-WIRE INTERFACE BUS
09/770,157	01/26/01	KM0920.1CCPCD1	MULTISTANDARD VIDEO DECODER AND DECOMPRESSION SYSTEM FOR PROCESSING ENCODED BIT STREAMS INCLUDING START CODE DETECTION AND METHODS RELATING THERETO
09/776,641, now U.S. Patent No. 6,950,930	02/05/2001	KM0920.1CCPCD3	MULTISTANDARD VIDEO DECODER AND DECOMPRESSION SYSTEM FOR PROCESSING ENCODED BIT STREAMS INCLUDING PIPELINE PROCESSING AND METHODS RELATING THERETO
09/777,283, now U.S. Patent No. 6,910,125	02/06/2001	KM0920.1CCPCD6	MULTISTANDARD VIDEO DECODER AND DECOMPRESSION SYSTEM FOR PROCESSING ENCODED BIT STREAMS INCLUDING A DECODER WITH TOKEN GENERATOR AND METHODS RELATING THERETO
09/778,377, now U.S. Patent No. 6,697,930	02/07/2001	KM0920.1CCPCD2	MULTISTANDARD VIDEO DECODER AND DECOMPRESSION METHOD FOR PROCESSING ENCODED BIT STREAMS ACCORDING TO RESPECTIVE DIFFERENT STANDARDS

Appl. No.	Filing Date	Attorney Docket No.	Title
09/974,530, now U.S. Patent No. 7,230,986	10/10/2001	KM0920.1CCPCD4D	MULTISTANDARD VIDEO DECODER AND DECOMPRESSION SYSTEM FOR PROCESSING ENCODED BIT STREAMS INCLUDING A VIDEO FORMATTER AND METHODS RELATING THERETO

Applicant notes that these matters relate, or may relate, to the present application. In addition, these matters include cited references, office actions, responses and notices of allowance. Applicant also notes that there may be other abandoned applications that form part of the patent family.

Applicant understands that the Examiner often has access to sophisticated online Patent Office computing systems that provide ready access to, for example, specification and drawing publications, pending claims and complete file histories, including, for example, cited art, office actions, responses, and notices of allowance.

Thus, Applicant respectfully requests the Examiner to review these file histories with respect to the patentability of this application. Also, if the Examiner cannot readily access these file histories, Applicant would be pleased to provide any portion of any of the file histories at any time upon specific Examiner request.

RESCISSON OF ANY PRIOR DISCLAIMERS AND REQUEST TO REVISIT ART

The claims of the present application are different and possibly broader in scope than any pending claims in any related application or issued claims in any related patent.

In these related cases, claims have been amended and received allowance over a number of references. To the extent that any amendments or characterizations of the scope of any claim or referenced art could be construed as a disclaimer of any subject matter supported by the present disclosure, Applicant hereby rescinds and retracts such disclaimer. Accordingly, the references cited in the related applications may need to be re-visited.

Also, the present communication includes alterations to the claims and to the extent claim scope or referenced art has been characterized, Applicant is not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application.

Applicants also reserve the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution.

In addition, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that Applicant has made any disclaimers or disavowals of any subject matter supported by the present application.

CONCLUSION

In view of the foregoing, the present application is believed to be in condition for allowance, and such allowance is respectfully requested. If further issues remain to be resolved, the Examiner is cordially invited to contact the undersigned such that any remaining issues may be promptly resolved.

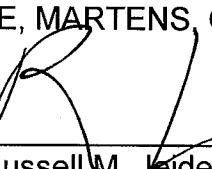
Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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